

RESOURCE REGENERATION INTEGRATED SOLUTION VR VISUAL EXPERIENCE



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RECYCLING FOR BETTER LIFE





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BESTON SERVICE

TEAM ELEGANT DEMEANOUR

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COMPANY PROFILE

FOCUS ON RESOURCE REGENERATION



Beston Group Co., Ltd. is the Environmental Protection Division of Henan Golee Holding Group, responsible for the promotion of resource regeneration solutions, equipment manufacturing and project implementation in the global market.

Beston was established in 2013, mainly engaged in: waste tires, plastic pyrolysis equipment, oil sludge pyrolysis equipment, waste oil distillation equipment, biomass carbonization equipment, sludge carbonization equipment, municipal waste sorting equipment, medical waste treatment equipment. As well as packaging technical solutions, installation and commissioning services, project operation services, etc.

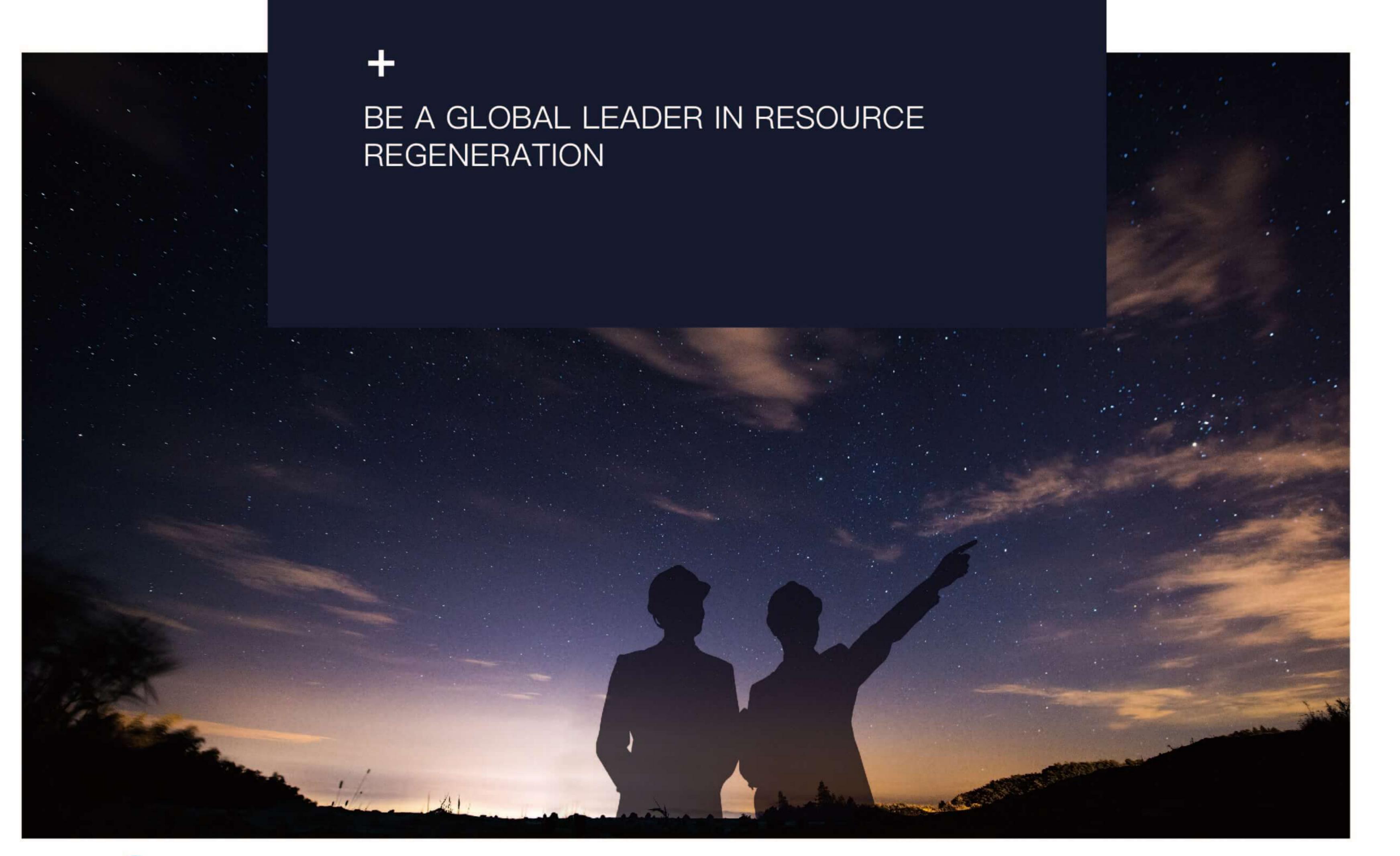


R & D AND MANUFACTURE

The manufacture factory covers an area of 16000 m², has more than 10 sets of advanced machining equipment, and has more than 20 senior professional and technical personnel, including 2 doctors, 5 professors and 5 associate professors, and more than 10 senior technical engineers. and more than 30 production technicians.

MARKETING

10 members team for online promotion and operation, 30 members team for international trade, and 8 members domestic business team, and 12 members after-sales team (more than 10 project operation engineers with foreign language skills and more than 5 years of experience).



CERTIFICATION AND QUALIFICATION



ISO9001 quality management system certification.



ISO14001 environmental management system certification.



More than 15 inventions patented technology.



Product safety qualified through CE certification.

(E)

Government certification:

national high-tech enterprise, partner of Zhengzhou University, vice-chairman unit of Henan Internet Business Association, and member unit of China Rubber Industry Association.













COMPANY STRATEGY

1004

Overseas exports to more than 100 countries and regions in the world.

30

Stable markets in more than 30 countries.

07

Set up overseas branches and offices in 7 countries.

With the mission of "focusing on the field of resource regeneration, continuing to provide customers with optimal solutions, and improving the global ecological environment", Beston adheres to the core values of "Customer-centric, Striver-oriented, Persistent team collaboration, Adhere to innovative management", and is committed to environmental protection industry.



In addition to mainland China, Beston has exported equipments to Russia, Central Asia, South Asia, Southeast Asia, East Asia, Middle East, Eastern Europe, Africa, Latin America and Australia, more than 100 countries and regions in the world, and had gained stable markets in more than 30 countries. In order to promote the pre-positioning of Cross-border e-commerce and Overseas customer service localization, Beston has set up overseas branches and offices in Romania, Brazil, Pakistan, Uzbekistan, the Philippines, Indonesia, Sri Lanka and other countries to continuously meet the diverse needs of overseas customers and provide customers with the best solutions and business success solutions. At present, Beston's projects in operation in the domestic and foreign have won customers and local government's unanimous praise.





COMPANY CULTURE



MISSION

To focus on the fields of resource regeneration, to continuously provide our customers with optimal solutions and improve global ecological environment



VISION

Be a global leader in resource regeneration



VALUES

Customer-centric, Striver-oriented, Persistent team collaboration, Adhere to innovative management



DEVELOPMENT HISTORY

2013

In 2013, created international brand-BESTON;

2014

In 2014, the first oil sludge pyrolysis project was completed in Nigeria and officially entered the African market;

2014

In 2014, the first waste tire pyrolysis project was completed in Brazil and officially entered the South American market;

2015

In 2015, Henan Beigong Machinery Manufacturing Co., Ltd. was established, and the environmental protection equipment realized the integration of industry and trade;

2015

In 2015,

Russia Novosibirsk branch was established (joint venture);

2016

In 2016,

Pakistan, Philippines branch was established to start the operation of overseas warehouse projects;

2016

In 2016, expanded business in Spain and other European and North American markets, and increased sales in the global market;

2017

In 2017,

we set up a branch in Tashkent, Uzbekistan.

Layout of central Asian market;

2018

In 2018, the waste plastic pyrolysis project was completed in Romania, and Romania branch (joint venture) was established;

2019

In 2019, the process-based organizational transformation will created "iron triangle" marketing team(product manager-project consultant-delivery manager);

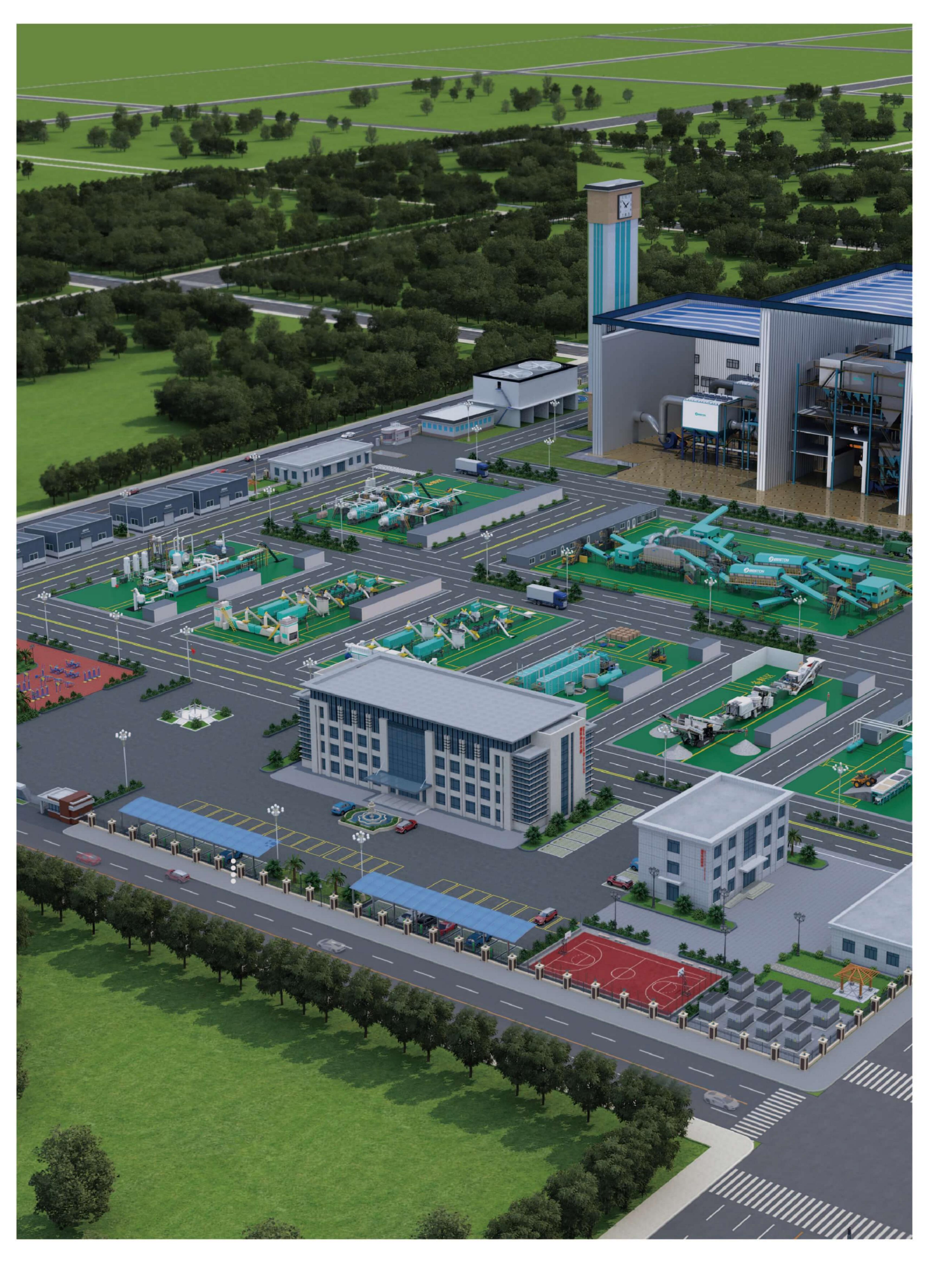
2020

In 2020, fully work resumption in the fight against the COVID-19 epidemic, and improve the online marketing and online after-sales service system;

2021

In 2021, Export sales of pyrolysis and carbonization industry ranked first, and egg carton industry ranked third.





INTRODUCTION OF SOLUTION



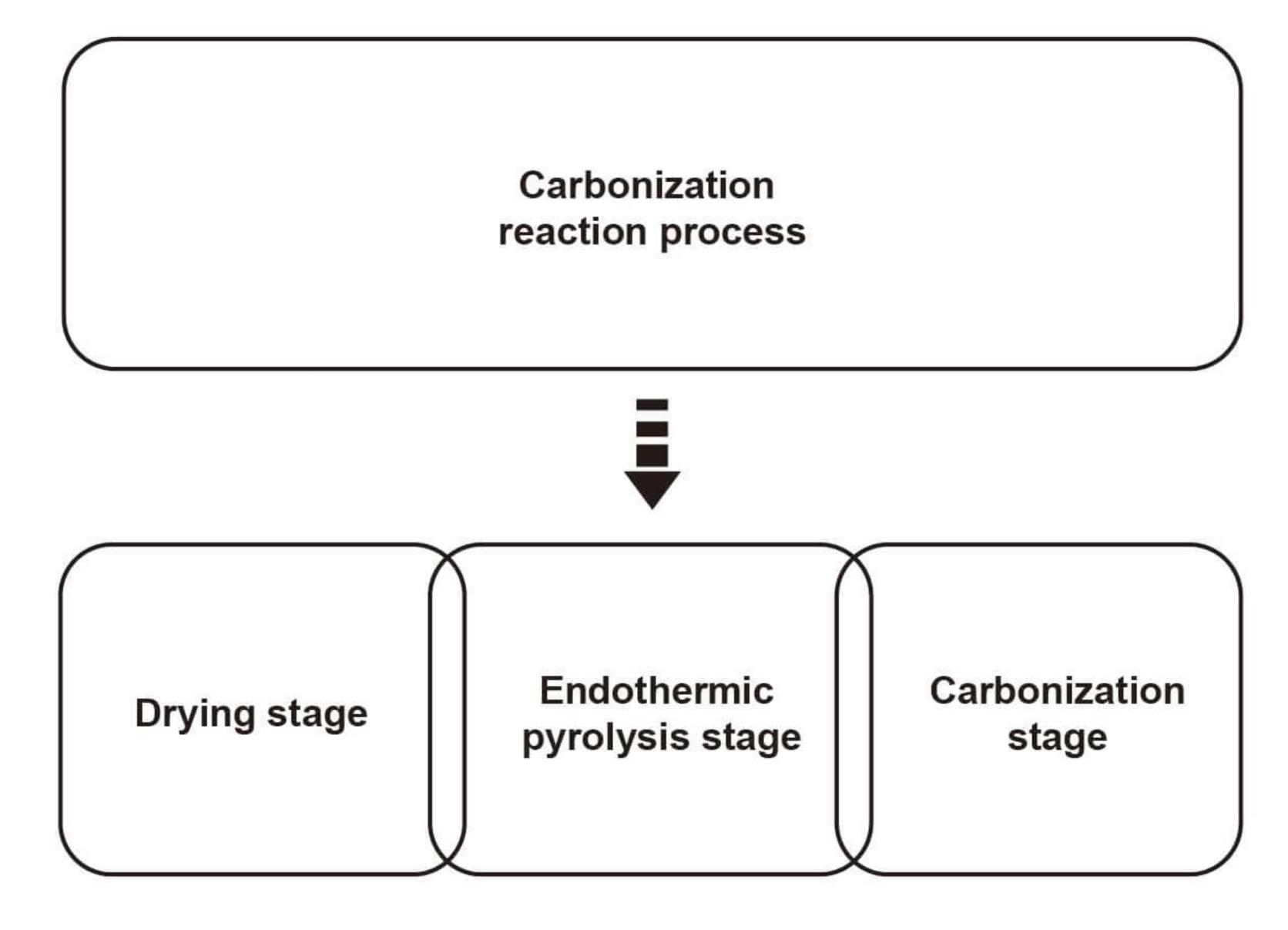
CARBONIZATION PRODUCTS

CARBONIZATION PRINCIPLE

The carbonization process is actually the dry distillation process of the material under high temperature conditions. In this process, the material is gradually heated within a certain low temperature range and under the condition of isolating air. The low molecular weight substances in the material first volatilize, and then a series of complex physical and chemical changes will occur in the material during the entire carbonization process. Physical changes are mainly dehydration, degassing and drying processes; chemical changes are mainly two types of reactions, thermal decomposition and thermal polycondensation.

Biomass carbonization refers to the process in which biomass raw materials are heated in an anaerobic or hypoxic environment to cause the internal decomposition of molecules to form biochar, and non-condensable gas products (combustible gas).

REACTION PROCESS



01

In the drying stage (inner barrel), the temperature is around 150°C, the external and internal moisture of the raw materials are evaporated by the heat supplied from the outside, and the shape of the raw materials does not change at this time.



In the endothermic pyrolysis stage at 220-270 °C, the raw materials begin to decompose and release gaseous products (such as CQ, CO2, H2S, etc.), the chemical composition of the raw materials begins to change, and the temperature at which different materials begin to pyrolyze is different. Materials with a low degree of deterioration also start at a lower temperature for pyrolysis.



The temperature in the carbonization stage is 270-400 °C, and the reaction is mainly polycondensation and thermal decomposition. A large amount of volatiles are precipitated from the raw materials, and almost all products such as methanol, and ethylene precipitated in the carbonization process are produced in this stage.

SUITABLE MATERIAL





Hazelnut shell and hazelnut shell charcoal



Sawdust and sawdust charcoal



Sludge class





Rice husk and rice husk charcoal





Coconut shell and coconut shell charcoal



BBQ Charcoal + Hookah Charcoal



BIOCHAR

It is widely used as fuel for grilling and rinsing. Agriculture and forestry carbon sequestration and emission reduction, improve soil fertility. growth used in foundry, chemical industry and other fields.



SYNGAS

It is recycled to heat the carbonization furnace. Makes the system more efficient and greatly reduces fuel costs.



FREQUENTLY ASKED QUESTIONS



Material carbonization temperature? Outlet temperature? Furnace temperature? Rotating speed?

The carbonization temperature of the material is also the reaction temperature of the material. Biomass is generally 380 degrees Celsius - 550 degrees Celsius.

The discharge temperature is below 30 degrees Celsius (if there is a buffer bin in the list, it does not need to be considered because the whole process is closed and not in contact with oxygen).

The temperature in the furnace is about 450 degrees Celsius - 750 degrees Celsius.

Under normal circumstances, the speed is 1-9 (the frequency conversion control is based on the actual operation).



Exhaust emissions?

The mixed gas produced by the material during the reaction is burned in the furnace for second time, and the combustion temperature is 500-800 degrees Celsius.

First: Provide a heat source for heating the furnace. According to the actual situation of gas production, the use of fuel in the main furnace can be regulated to achieve the purpose of energy saving. It could be realized that only combustible gas can provide heat source for equipment. Second: the mixed gas produced by the reaction of the material is burned at a high temperature of 500-800 degrees Celsius, while also eliminating the emission of harmful gases and reducing the emissions pressure.



Carbon yield

Taking wood chips, rice husks and crushed coconut shells as an example, each ton of materials with a moisture content of less than 10% can obtain finished charcoal 280KG----310KG, which is basically maintained at 3:1.



Temperature monitoring and motor

The complete set of equipment has 4-6 thermocouples, that is, there are 4-6 temperature detection points (installation location: the main furnace and auxiliary furnace, biogas outlet, waste smoke in, waste smoke out, biochar outlet) which all connected to the PLC. Operator can get these dates intuitively from PLC and adjust the fan speed accordingly to ensure the quality of the biochar (Note: the reaction temperature and time will affect the quality of biochar).



Reaction Time

Taking wood chips and rice husks as examples from feeding to discharging, the entire carbonization process lasts for 15 minutes to 25 minutes. The particle size, density, moisture content of the material and the requirement of the finished charcoal will all affect the carbonization time.



About repair and maintenance

Due to different materials and different supporting processes, our installers will train the owner's personnel on operation and daily precautions according to the owner's materials and actual operation after the installation and commissioning. And write the operation manual according to the actual operation (including maintenance matters and how to maintain it).



PROFIT ANALYSIS

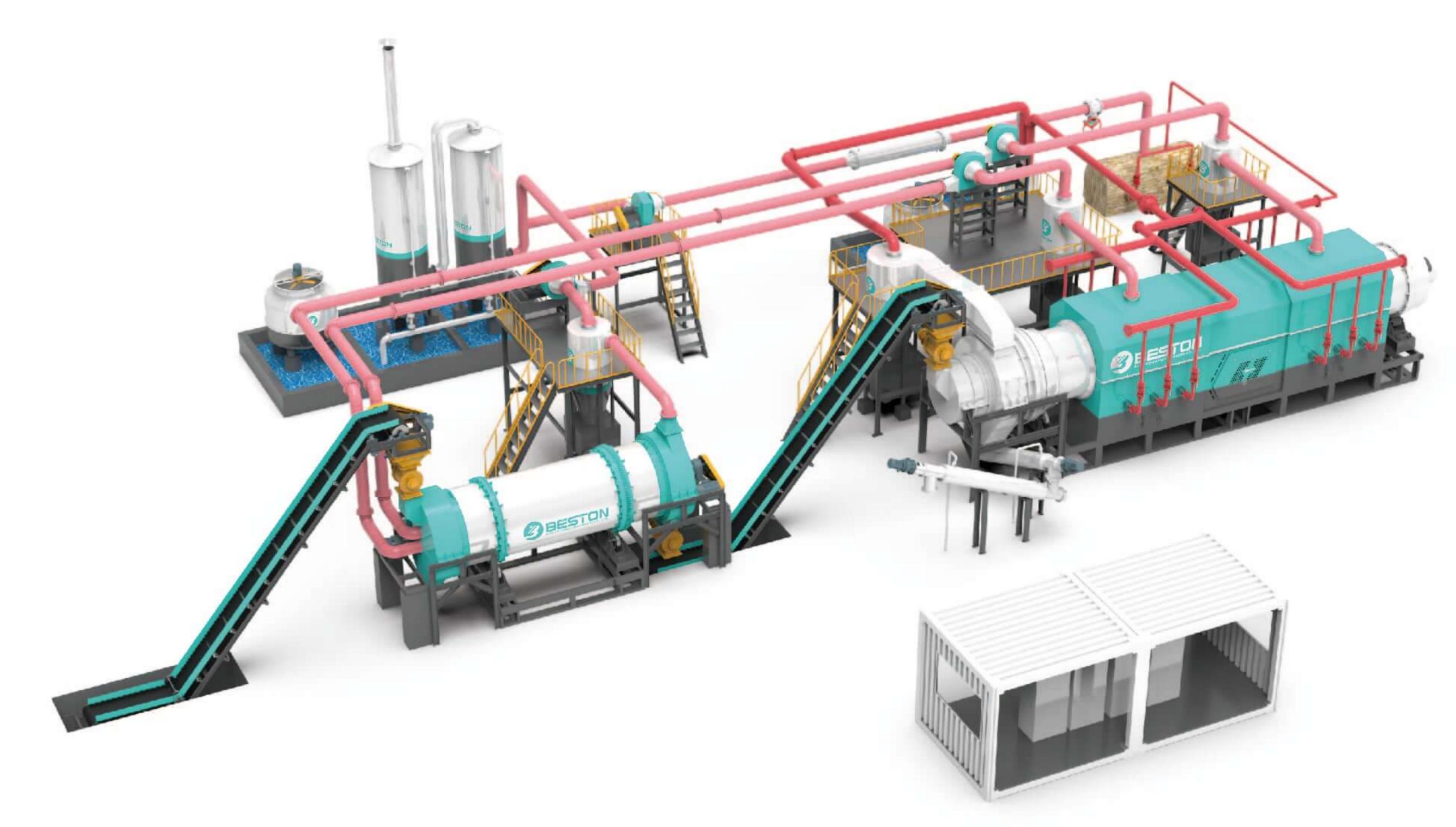
		Return on Investment	of BST-50 wo	ood chips carboni	zation project	in The middle ea	st region		
Project name	5TPH wood chips carbonization								
Introduction									
Fixed Investment Cost	Item	Details	Unit	Unit price/USD	Quantity	Amount/USD	Total amount	Remark	
	Equipment	BST-50	Set	250000.00	1.00	250000.00			
	Transportation	From China to Destination port	Set	90000.00	1.00	90000.00			
		From Port to Site	Set	5800.00	1.00	5800.00			
	Customs tax	15%	Set	37500.00	1.00	37500.00			
		Beston technician's salary	Day	350.00	50.00	17500.00			
		Round - trip airtickets	Ea	2420.00	2.00	4840.00			
		Visa	Ea	350.00	1.00	350.00			
	Installation	Local welder	Day	65.00	100.00	6500.00		Two welders are needed	
		Local plumber	Day	65.00	20.00	1300.00			
		Local labor	Day	16.80	50.00	840.00			
		Crane forklift	Day	80.00	30.00	2400.00			
	Materials	Installation materials ready	Set	3500.00	1.00	3500.00		Foundation, pipe, etc.	
	License	1	Ea	2000.00	1.00	2000.00		Environmental, firefighting, etc.	
	Workshop	500	m²	160.00	500.00	80000.00			
							US\$: 502,530.00		
Operating Cost	Raw materials	Wood chips	Ton	100.00	120.00	12000.00			
	Water		m³	1.76	3.00	5.28			
	Electricity		KWH	0.11	2922.00	321.42			
	Fuel	Natural gas	Liter	7.25	270.00	1957.50			
	Labor		People	16.80	4.00	67.20			
	Maintenance		Day	85.00	1.00	85.00			
	Depreciation	8 years	Day	209.39	1.00	209.39			
	Tax	5%				0.00			
							US\$: 10,946.40		
End Products Price	Biochar	30%	Ton	680.00	36.00	24480.00		30% of input	
	Wood vinegar	8%	Ton	1280.00	9.60	12288.00		8% of input	
	Tar oil	2%	Ton	450.00	2.40	1080.00		2% of input	
							US\$: 37,848.00		
Daily Income							US\$: 26,901.60		
Monthly Income	Working day		Day	25.00			US\$: 672,540.00		
Yearly Income	Working day		Day	300.00			US\$: 8,070,480.00		



MODEL PARAMETERS

Model	BST-10	BST-30	BST-50	BST-05 Pro (Skid mounted)			
Land	L25m*W15m*H7m	L30m*W15m*H7m	L35m*W15m*H8m	L9.5m*W2.3m*H3m			
Total	34.7kw	61.5kw	116kw	31kw			
Input capacity	2-4m³/h (1000kg/h)	7-9m³/h (3000kg/h)	10-15m³/h (5000kg/h)	0.3-0.5m³/h (300kg/h)			
Reactor diameter	Ø1300	Ø1700	Ø2000	Ø830			
Reactor material	Q245R + 310S						
Structure		Double barrel Single hearth					
Pressure	Micro negative pressure						
Speed	1-9RPM						
Fuel	Diesel/natural gas/heavy oil						
Noise	≤80dB						
Condenser	Circulating water cooling						
Rotation method	External gear rotation						
Heat method	Direct heating						
Working method	Continuous						
Control	Automatic control						
Feed requirement	Size ≤20mm; moisture ≤15%; strong liquidity						

WHOLE AND COMPONENT DRAWINGS

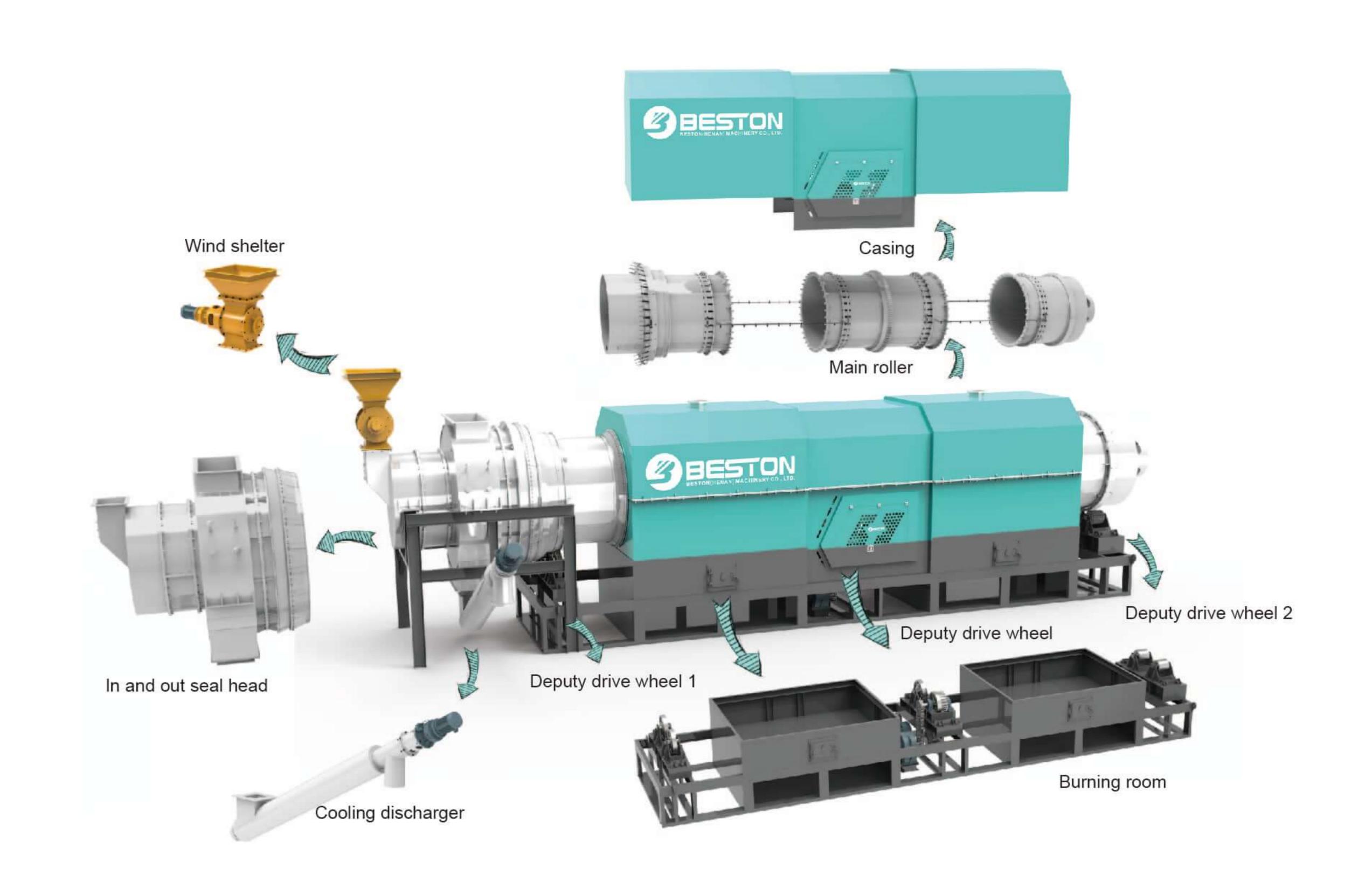


FULLY CONTINUOUS

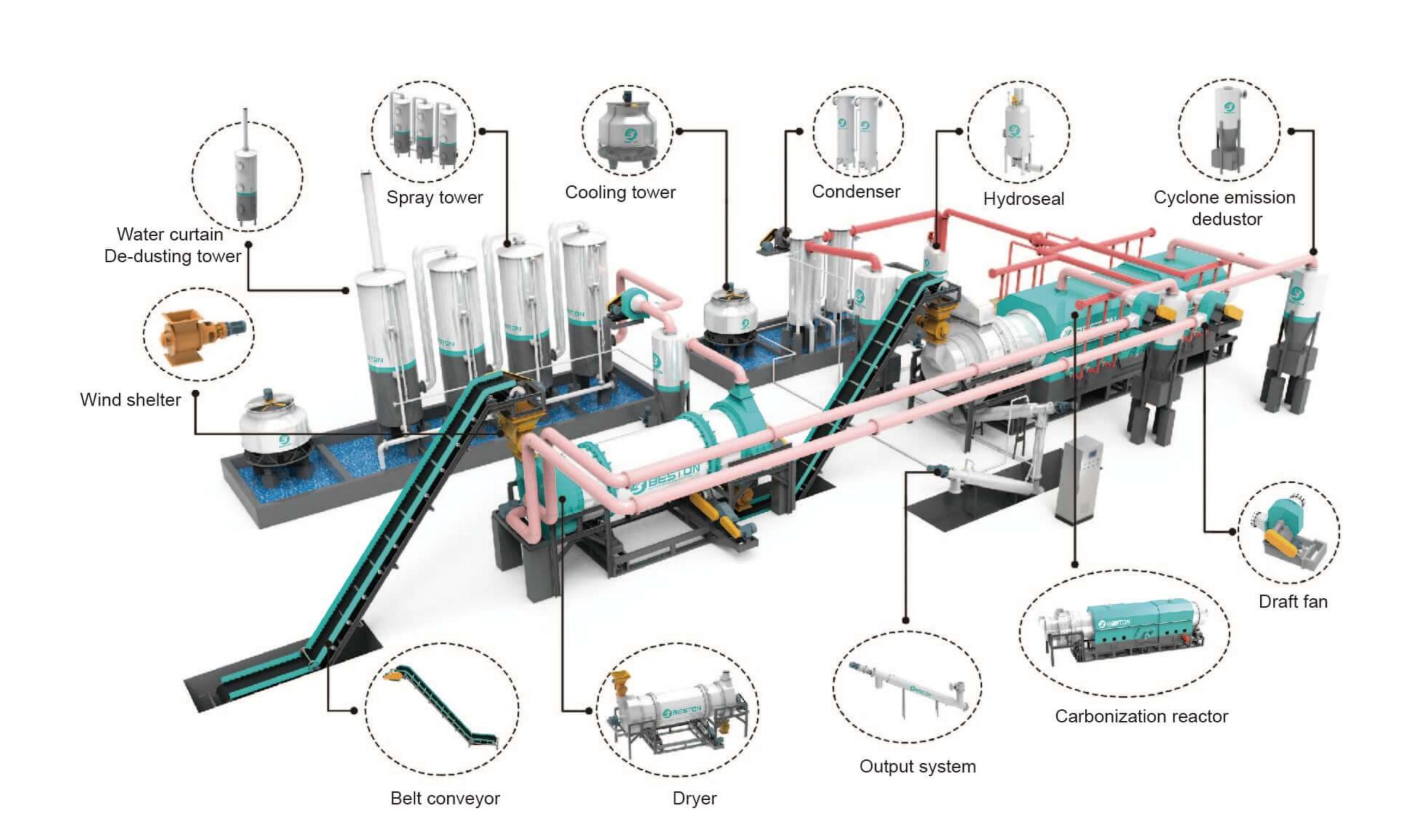


DRYING FURNACE PARTS DISPLAY DIAGRAM

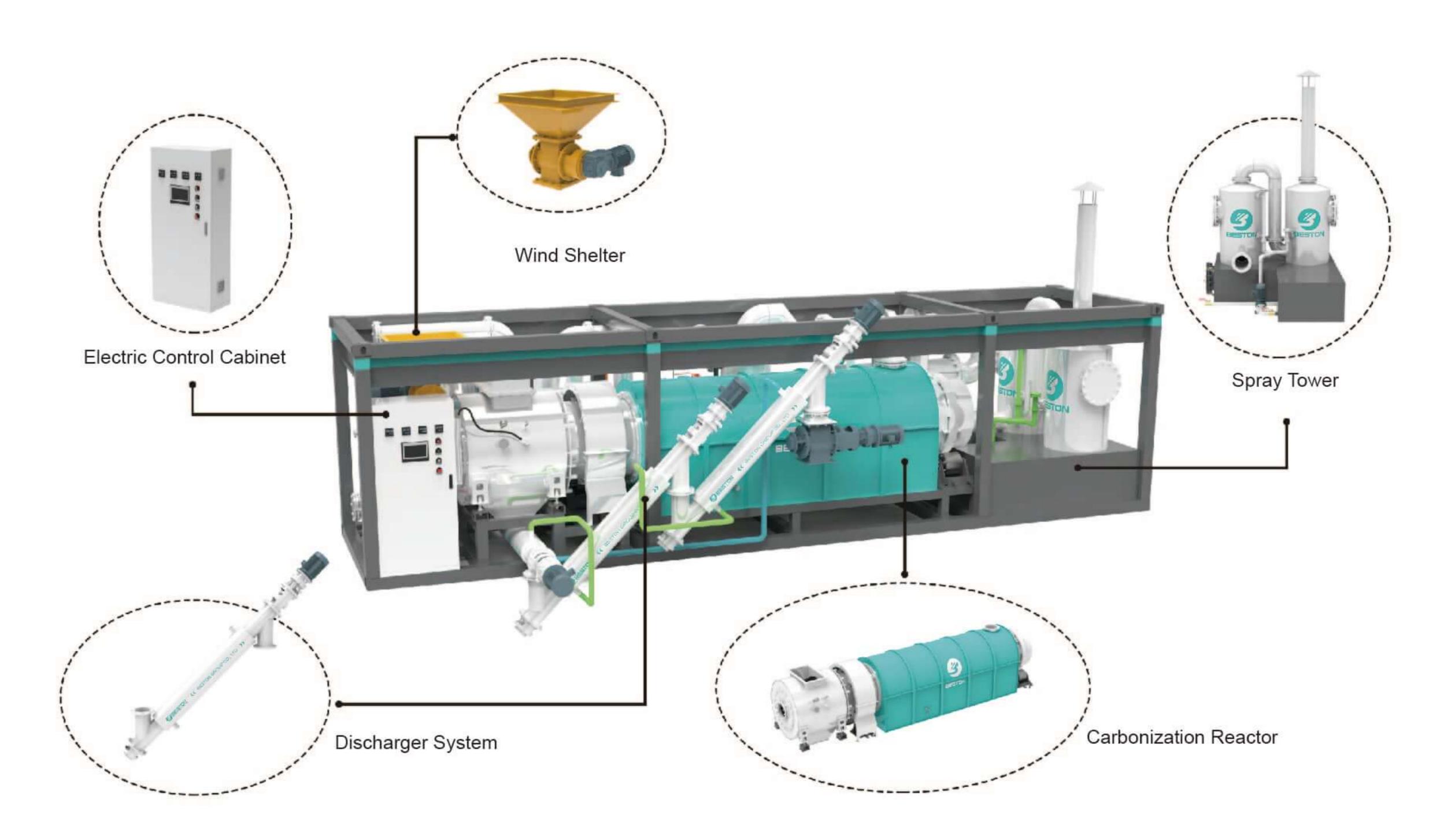




THE GUIDE VIEW FOR THE PARTS OF CARBONIZATION REACTOR

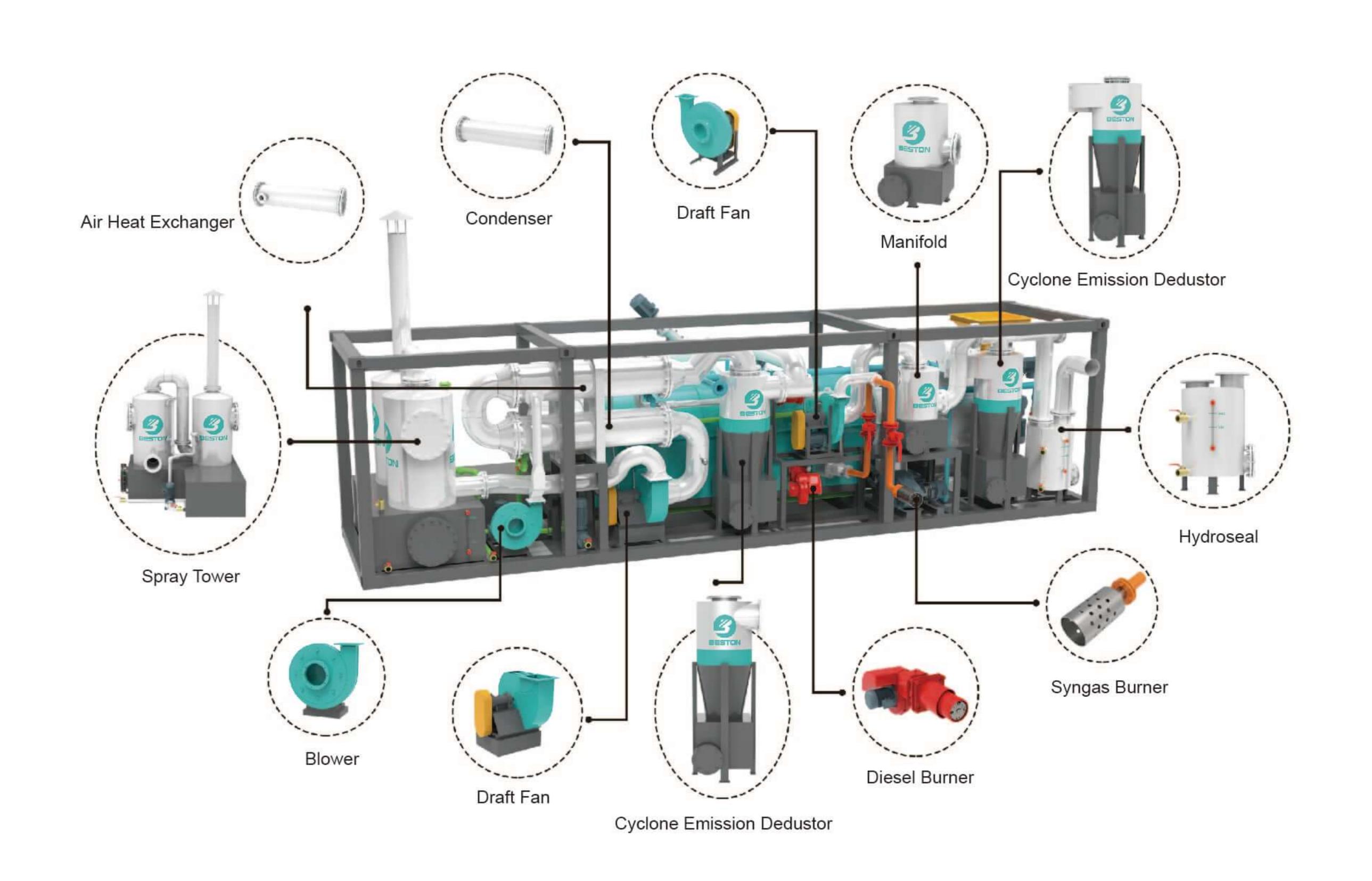


THE GUIDE VIEW FOR THE PARTS OF CARBONIZATION MACHINE



SKID MOUNTED CARBONIZATION

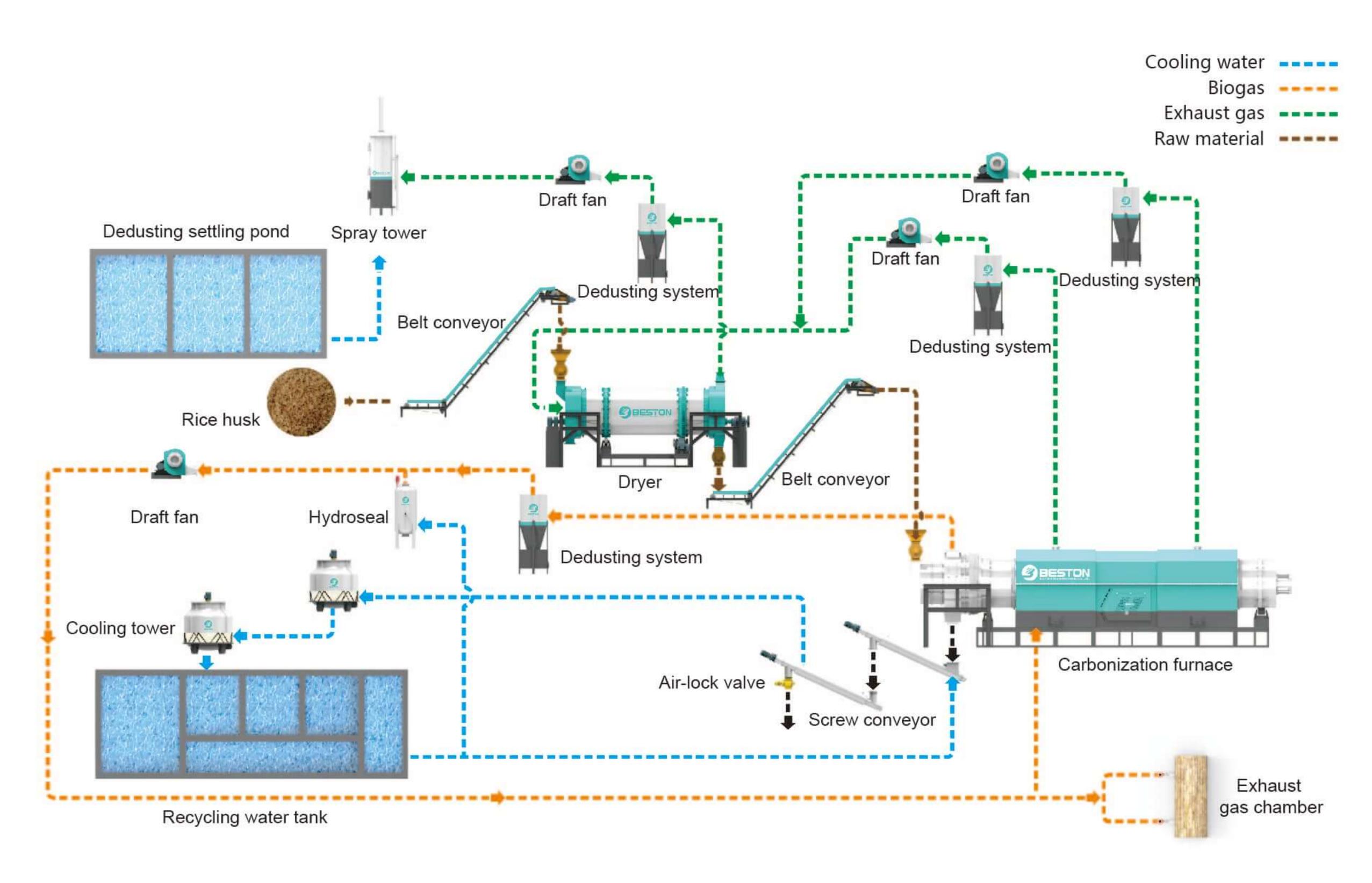
MACHINE PARTS SHOW FIGURE -A SIDE



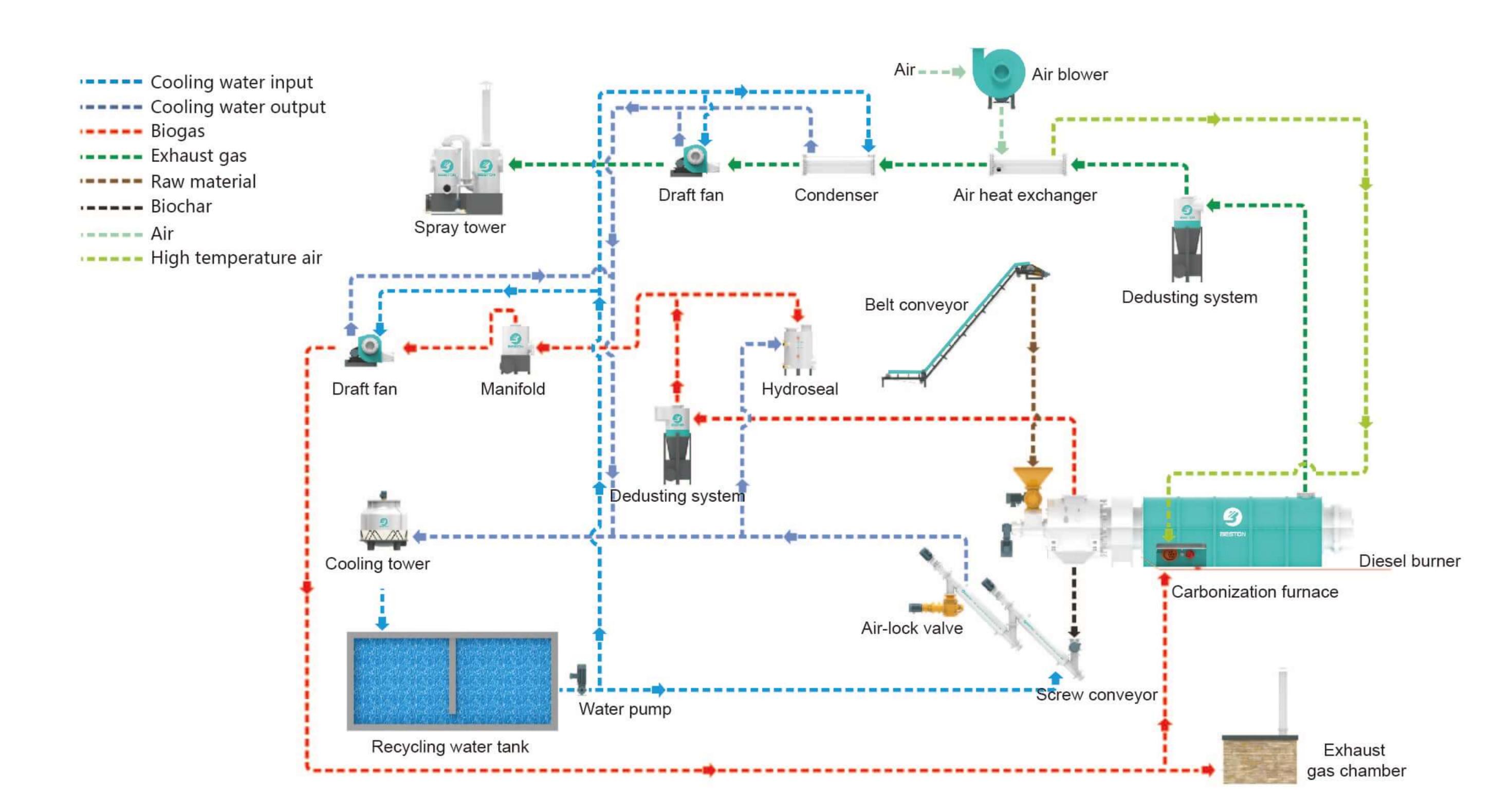
SKID MOUNTED CARBONIZATION

MACHINE PARTS SHOW FIGURE -B SIDE

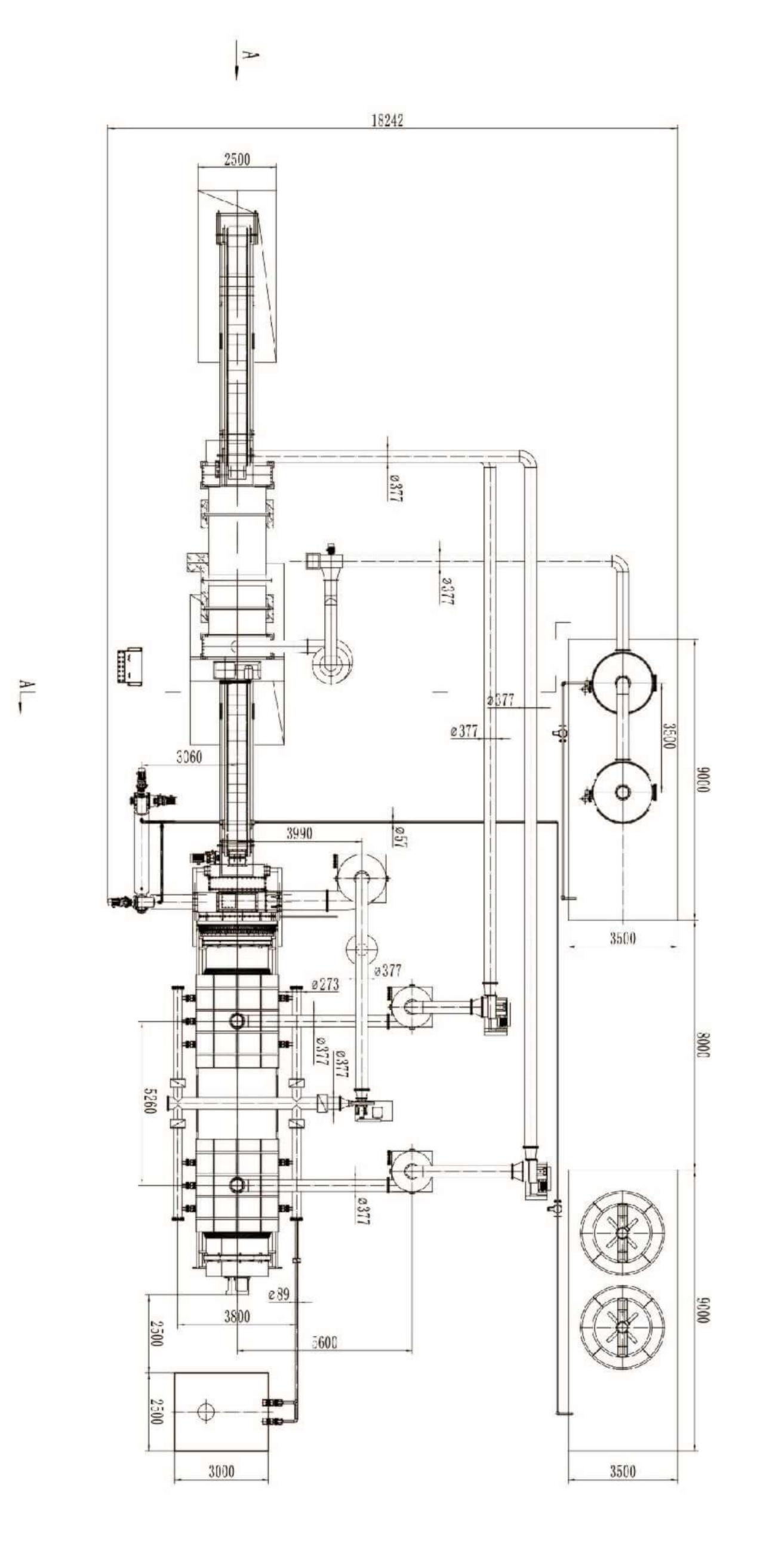
FLOW CHARTS AND LAYOUT

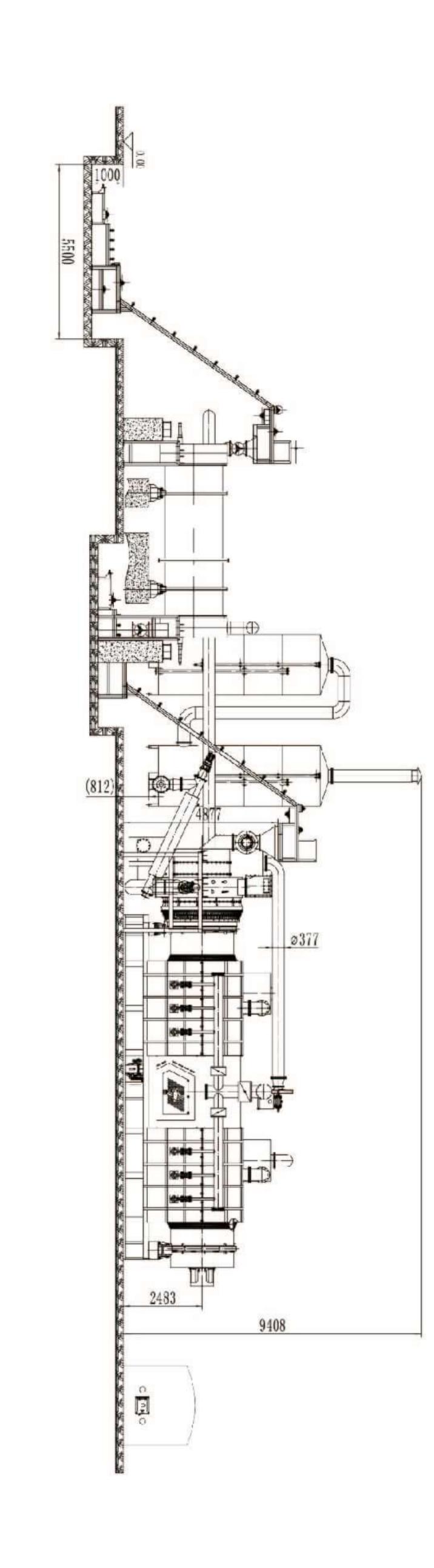


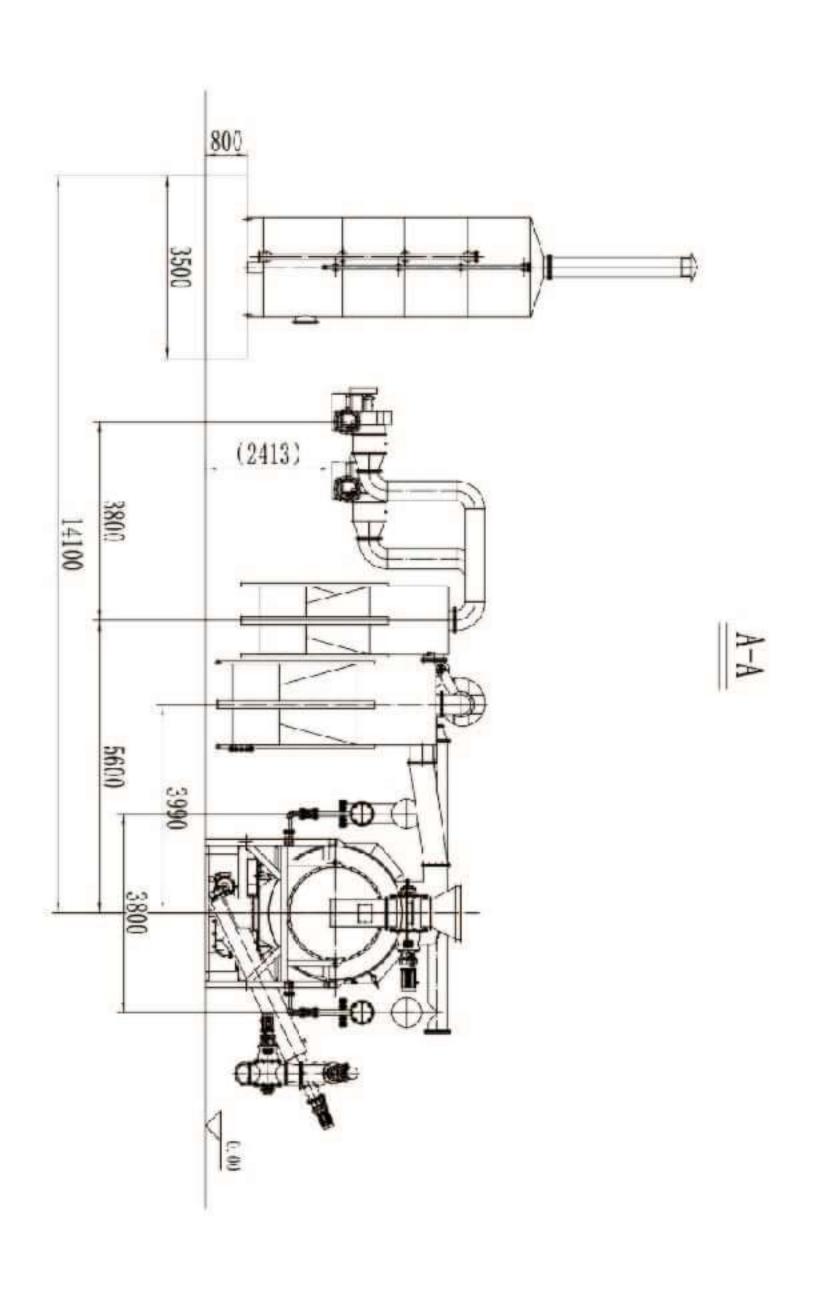
OPERATION FLOW CHART OF CONTINUOUS CARBONIZATION MACHINE



SKID MOUNTED CARBONIZATION
MACHINE OPERATION FLOW CHART











0

EXPLOSION-PROOF HOLE

When the equipment is working, the pressure is slightly negative pressure (the pressure gauge shows that 8mm is negligible), explosion-proof hole at the end of the main furnace (to prevent the pressure inside the equipment from being too large).

03

WITH EXPLOSION-PROOF WATER SEAL

There is an explosion-proof water seal at the combustible pipeline (to prevent abnormal pressure of combustible gas in the equipment).

02

EQUIPPED WITH ALARM DEVICE

The PLC electric cabinet has an alarm device, and there will be an alarm display and an alarm for some electrical failures.

04

VARIABLE FREQUENCY FAN GUIDE

The direction of the gas in all pipelines is led by the fan (the fan is variable frequency), and it will be displayed on the PLC when the pipeline is blocked.

05

DOUBLE BARREL BODY IS USED

Using inner and outer double-layer cylinders, the outer layer is deeply heated, the whole machine adopts a double-return heating structure, and the user has a very high praise rate.

06

HIGH HEAT EFFICIENCY

The material is not in contact with the flue gas and is not polluted by hot air, and the heat utilization rate of the single-layer external heating structure is more than doubled.

07

GOOD ENERGY SAVING EFFECT

The heat utilization rate of this equipment is higher, the use of air heat exchanger can effectively improve the thermal efficiency by 5-10%, and the energy saving effect is good.

08

INTERNET OF THINGS

Monitor product usage, operating parameters, faults and other information, and grasp product information in real time.









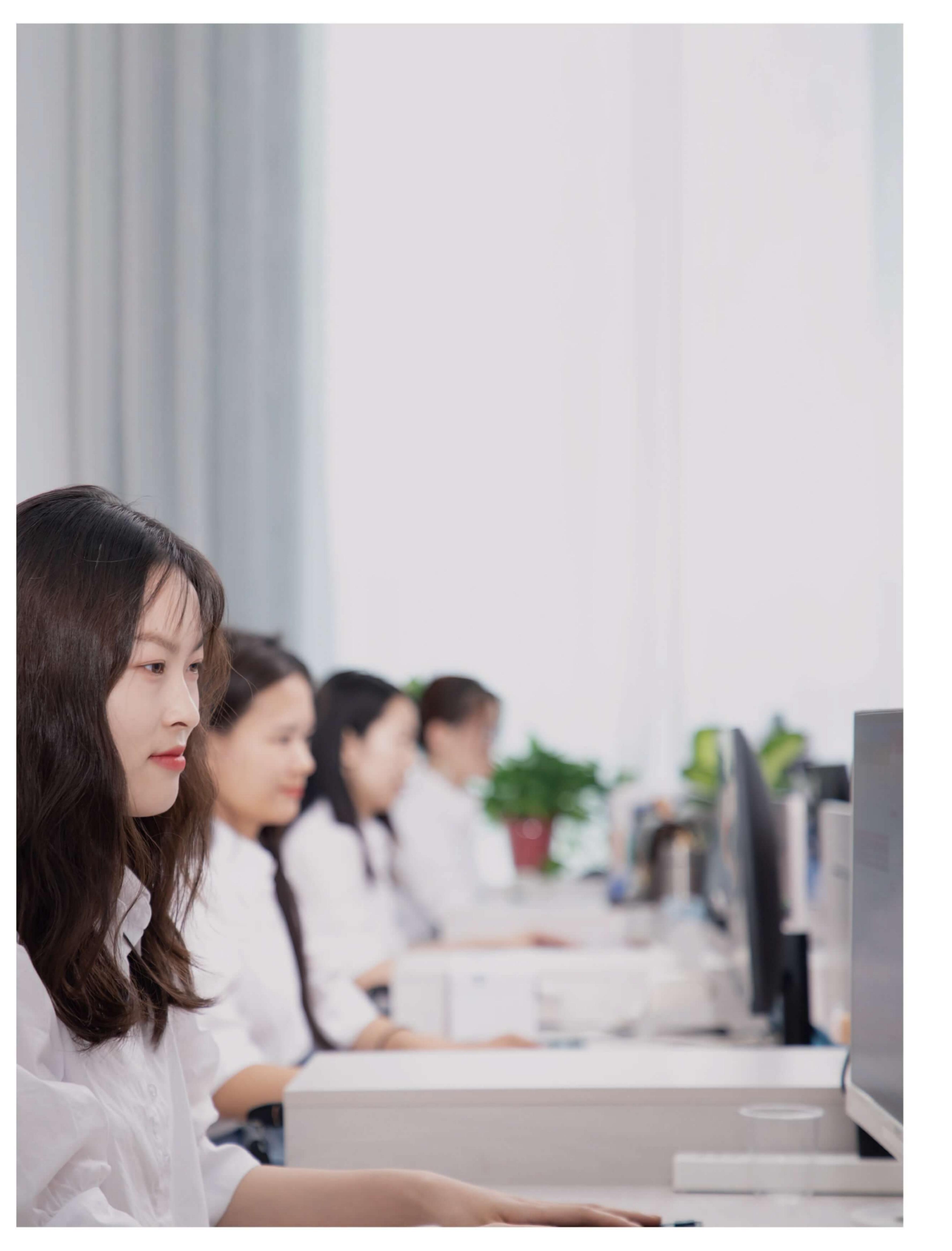
CARBONIZATION PROJECT CASE SHOW

- Lianyungang in 2021
 Carbonized BST-10
- Brazil 2020
 Carbonized BST-30
- Guizhou in 2021
 Carbonized BST-10
- Spain 2021
 Carbonized BST-30









BESTON SERVICE



PRE-SALES SERVICE

THERE ARE DEDICATED PROJECT CONSULTANTS

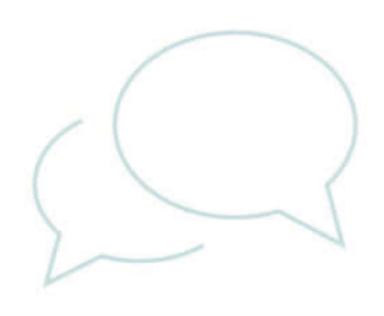
Know customer requirements in detail, and provide product configuration solutions for customers to choose;

02

Invite customers to visit Beston's production site or factory area, and introduce the whole process;

03

According to customer needs, introduce necessary supporting programs or financing programs.



DURNING PRODUCTION SERVICE

WITH A DEDICATED DELIVERY MANAGER

Provide customers with the production progress of products in the workshop in every Monday;



According to the demand, invite customers to the factory to verify the delivery before delivery;

production in a shorter time;

Monitor the entire transportation process to ensure safety and timeliness;



Contact customers in advance to prepare auxiliary items needed on site to ensure

Provide layout, foundation, electric drawings and assemble drawing with the customer in advance, and guide the customer to do the civil work in advance to ensure the production in a shorter time.



AFTER-SALES SERVICE

DUAL SERVICE OF EXCLUSIVE DELIVERY MANAGER AND AFTER-SALES ENGINEER

01

On-site installation, commissioning and production, engineers escort the whole process;

02.

Provide professional training to help customers develop on-site professional production and operation teams;

03.

Continue to conduct on-site inspections for customers, know equipment conditions, and solve problems;

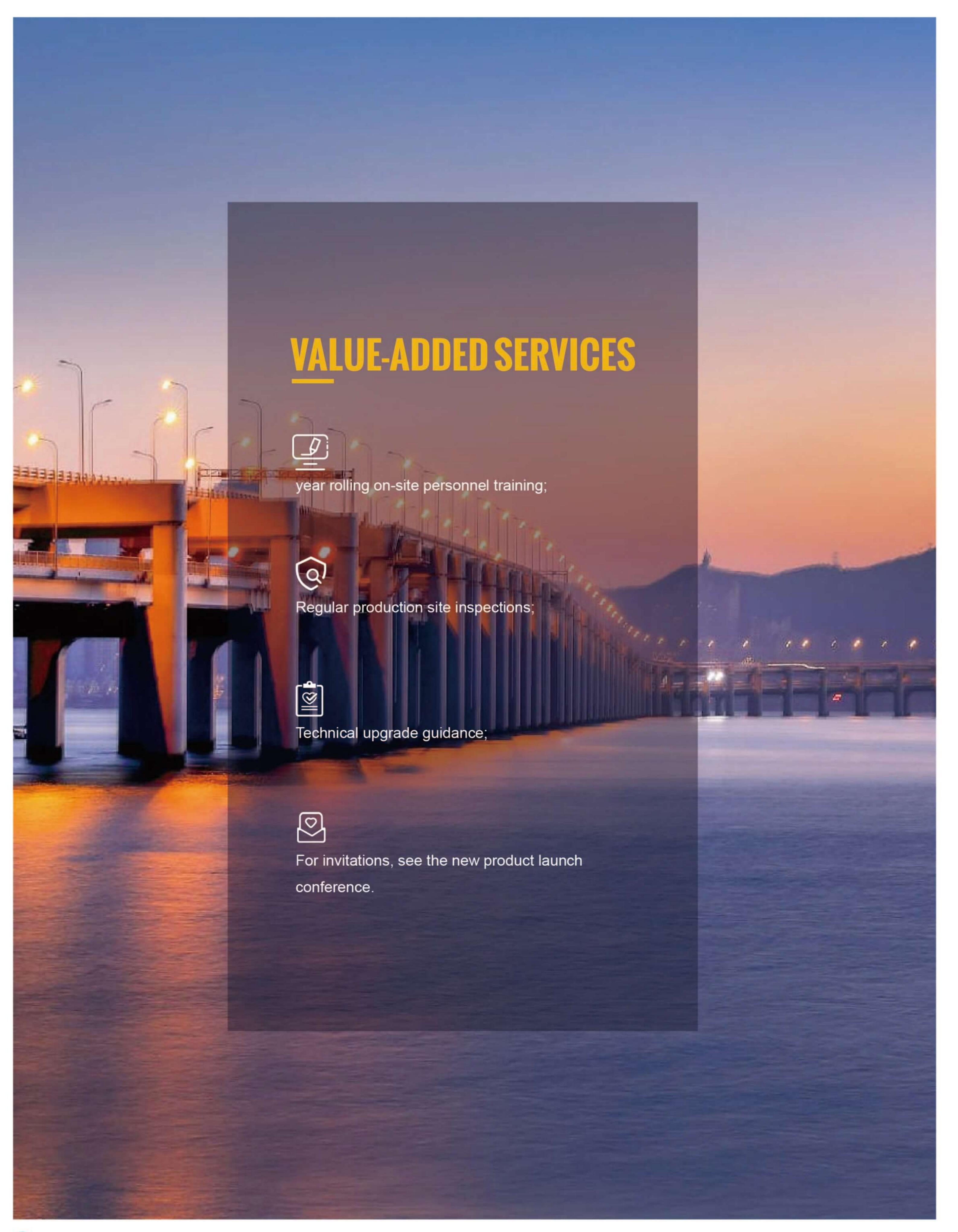
04.

Delivery manager exclusive services, establish customer product use files, maintain customers regularly, maintain efficient communication, and solve problems for customers in a timely manner;

05.

Provide spare parts for customers for life.





SERVICE MECHANISM



Parts supply guarantee system: delivery in the shortest time in a faster and more efficient way.



One-day response system: Troubleshooting control is completed within 24 hours.

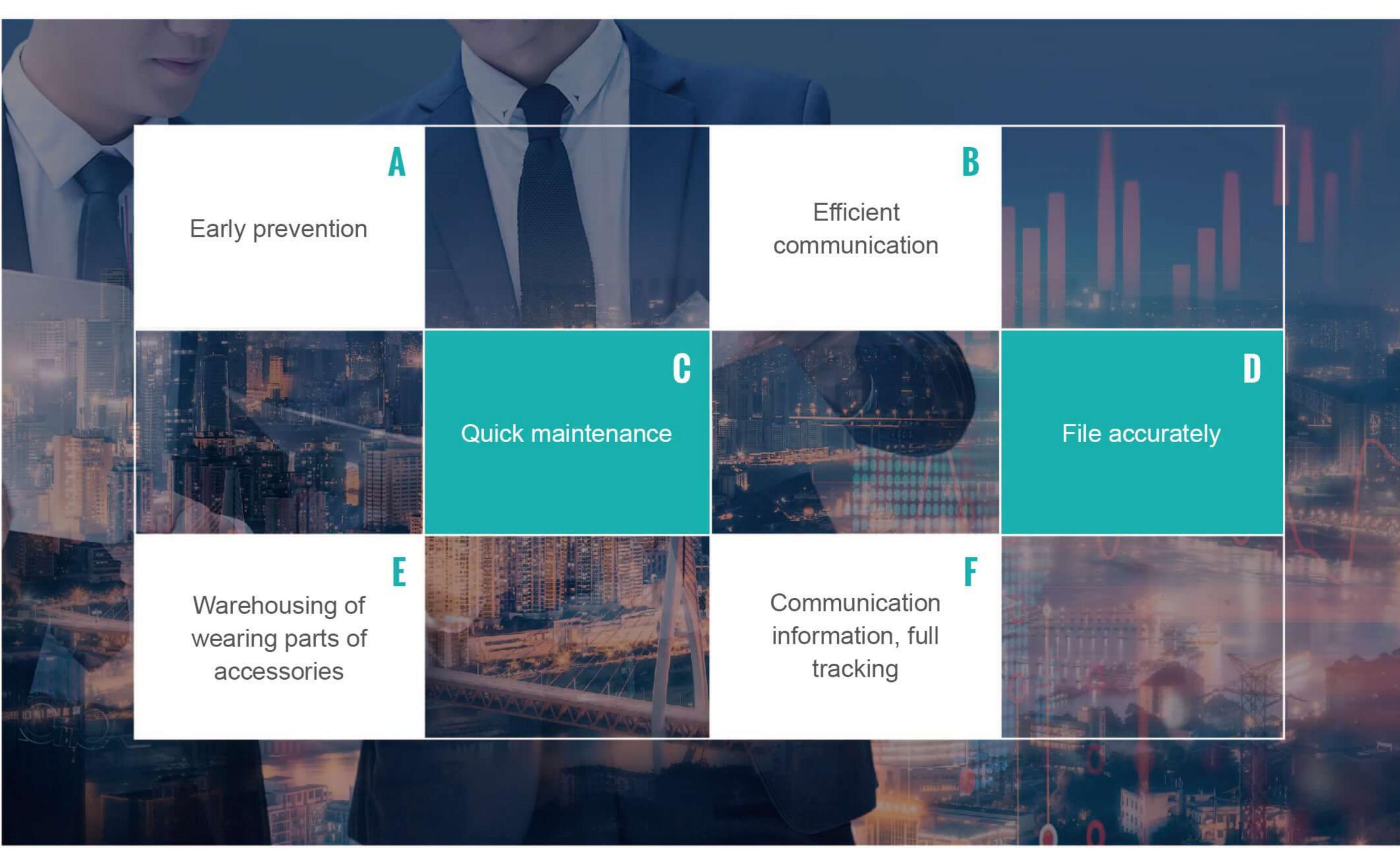


Double supervision system: The general manager and the marketing manager are double-supervised, providing green channels such as manpower, material resources, financial resources, technical guidance and accessories supply for the service.



Three-minute response system: The service personnel are required to contact the customer within 3 minutes after receiving the instruction to dispatch the work order.

SERVICE MANAGEMENT MODE



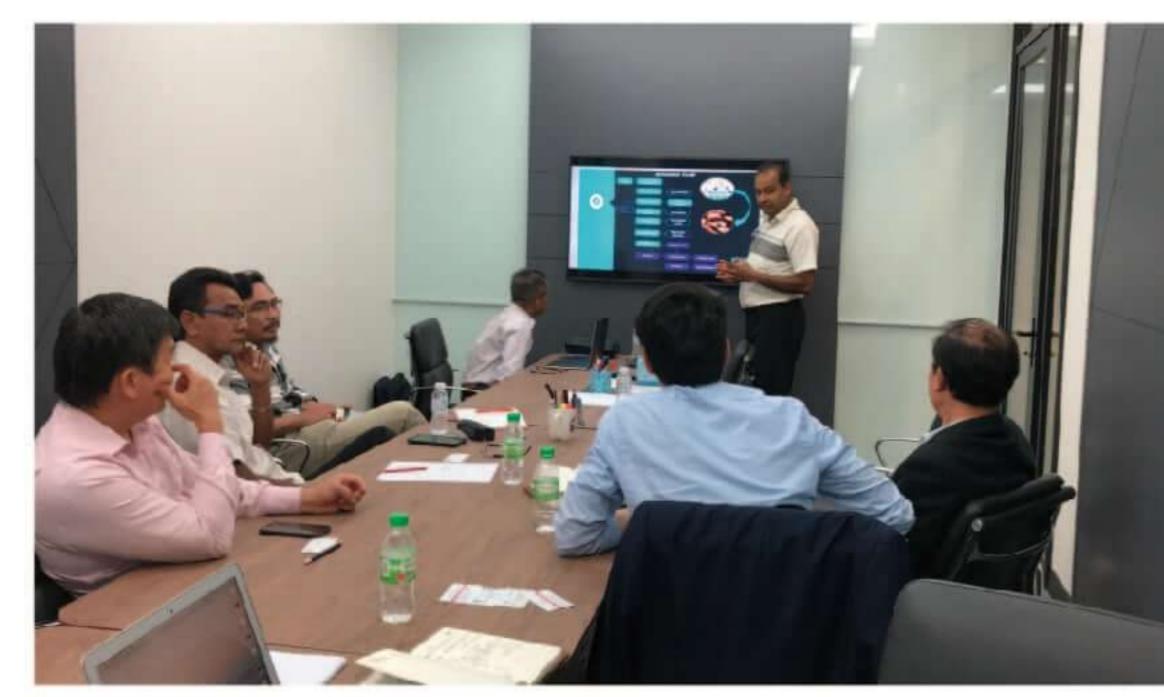








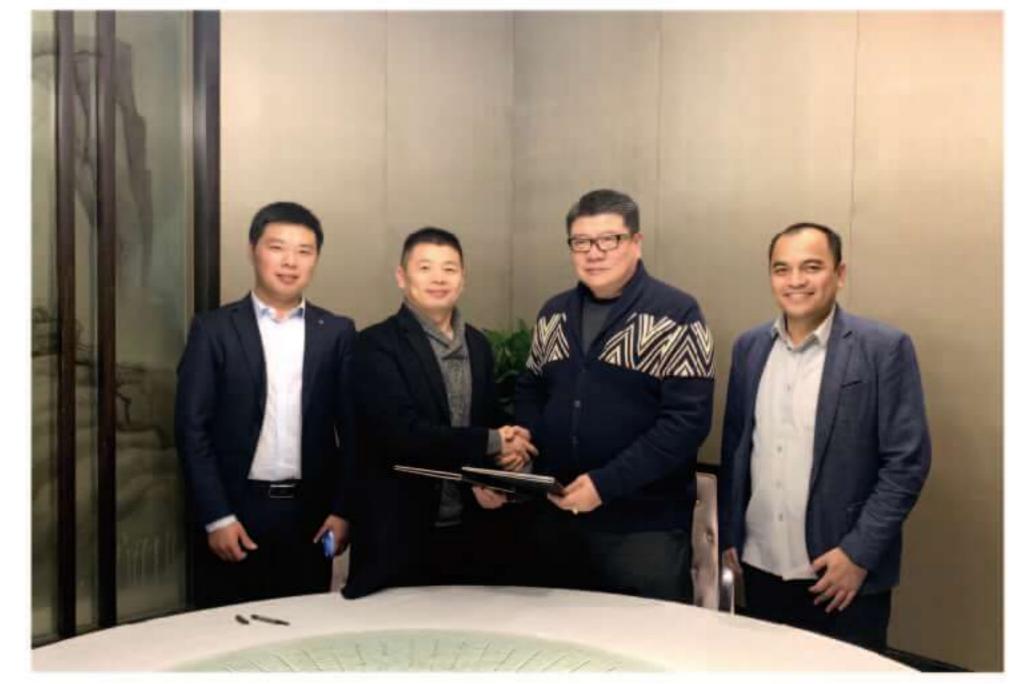




CONCENTRATION







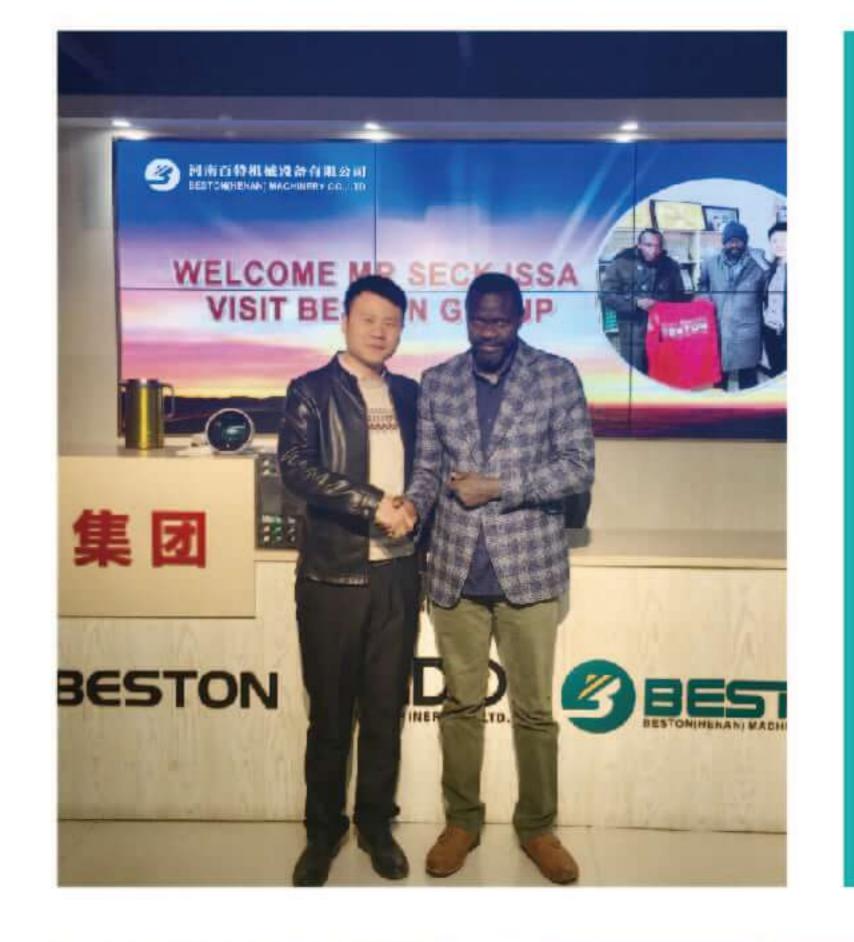
SERVICE ABILITY





COHESION

















CREATIVITY











BRAND FORCE



